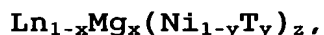


**What is claimed is:**

1. A nickel-hydrogen secondary battery comprising a positive electrode and a negative electrode opposite each other with a separator between, and contained in a container with an alkaline electrolyte;

wherein the positive electrode contains nickel hydroxide, and at least one element selected from a group consisting of Y, Yb, Er, Ca, Sr, Ba, Nb, Ti, W, Mo and Ta; and

wherein the negative electrode contains a hydrogen-absorbing alloy having composition represented by a general formula



where Ln is at least one element selected from a group consisting of the lanthanoids, Ca, Sr, Sc, Y, Ti, Zr and Hf, T is at least one element selected from a group consisting of V, Nb, Ta, Cr, Mo, Mn, Fe, Co, Al, Ga, Zn, Sn, In, Cu, Si, P and B, and x, y and z are numerical values satisfying the requirements  $0 < x < 1$ ,  $0 \leq y \leq 0.5$ , and  $2.5 \leq z \leq 4.5$ , respectively.

2. The nickel-hydrogen secondary battery according to claim 1, wherein the surface of the nickel hydroxide is coated with a cobalt compound.

3. The nickel-hydrogen secondary battery according to claim 2, wherein the cobalt compound is a higher-order cobalt compound which has distorted crystal structure and contains alkali cations.

4. The nickel-hydrogen secondary battery according to claim 3, wherein the average valency of nickel contained in the nickel hydroxide is higher than 2.

5. The nickel-hydrogen secondary battery according to claim 4, wherein the average valency of nickel contained in

the nickel hydroxide is in the range of 2.05 to 2.30.

6. The nickel-hydrogen secondary battery according to claim 5, wherein the average valency of nickel contained in the nickel hydroxide is in the range of 2.10 to 2.30.

5        7. The nickel-hydrogen secondary battery according to any of claims 1 to 6, wherein the nickel hydroxide contains Co and Zn in a form of a solid solution.

10       8. The nickel-hydrogen secondary battery according to claim 7, wherein the positive electrode contains at least one compound selected from a group consisting of  $Y_2O_3$ ,  $Nb_2O_5$ ,  $Yb_2O_3$ ,  $Er_2O_3$ ,  $Ca(OH)_2$ ,  $SrO$ ,  $Ba(OH)_2$ ,  $TiO_2$ ,  $WO_2$ ,  $WO_3$ ,  $MoO_2$ ,  $MoO_3$  and  $Ta_2O_5$ .

9. The nickel-hydrogen secondary battery according to claim 8, wherein the positive electrode contains  $Y_2O_3$ .

15       10. The nickel-hydrogen secondary battery according to claim 9, wherein the hydrogen-absorbing alloy contains La, Nd, Pr, Co and Al.